A Simple Retentive Dressing for Fractures of the Clavicle

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THE advent of Velpeau's and the army's wooden cross method of immobilization during healing of fracture of the clavicle has modified only in degree the validity of Pilcher's observation (cited by Russ in 1905) that "those methods which are efficient are intolerable and those which are tolerable are inefficient."

A new, relatively comfortable and otherwise advantageous method of support and bandaging by which the fractured ends of a clavicle are held in approximation and alignment, with the surrounding musculature relaxed, has been devised. In this method the hand on the injured side is placed in such a position—over the breast near the axilla on the affected side rather than across the breast on the opposite side—that there is neither traction nor compression nor torsion at the site of fracture.

A wide, sturdy chest belt, a short crutch, a seven-yard roll of 3-inch gauze stockinet, and a nylon-covered sponge-rubber shoulder pad are the materials used (see Figure A). Attached to the belt are six buckles—three at the front and three at the back—which are used as anchoring points for the bandage. At a point on the belt above the hip are several pouches, one above another, into any of which the stem of the crutch may be placed so that the shoulder is supported at the optimal level. Figure B illustrates the first step in the bandaging procedure—the belt in place and a strap in which a water pad is fixed, dangling from one of the anterior buckles. First the dangling strap is thrown over the shoulder but is not yet drawn tight. Then a slit is made in the stockinet four feet from the end and the patient's arm is thrust into it (Figure C). The loose end beyond the finger tips (Figure D) is thrown over the injured shoulder and drawn diagonally across the back until the elbow is in acute flexion and the hand on the injured side is drawn into position against the breast on the injured side. To maintain this position during the remainder of the bandaging procedure, the patient holds the loose end of the bandage in the hand on the opposite side. (Ultimately this end is buckled into the back of the belt.) With the coiled end of the bandage, two turns are made around the retracted arm in a rising spiral, then two turns around the chest, spiralling downward (Figure D). The crutch is then put into place (Figure E) with the stem in the proper socket in the belt, and two more turns of the bandage are made around the chest and over the stem of the crutch. Thence the bandage is spiralled down the arm and forearm (leaving the olecranon uncovered) to the wrist. There it is reversed and spiralled upward to the elbow. From the elbow it is drawn over the spindle of the crutch (Figure F) so that the elbow is supported and the shoulder lifted. The remaining step is to unroll the rest of the stockinet, running it from the forward end of the crutch spindle, over the shoulder. At the point at which it crosses the fracture site it is slit and the sponge-rubber pad inserted in the slit. The loose end is then put through a buckle at the back of the belt and drawn snug. The water pad is placed atop the sponge and the end of the strip holding it is pulled through a rear buckle. The fracture site may be uncovered for inspection at any time by releasing ends of the bandages from the buckles (Figure G).

Stationer's paper fasteners, rather than pins or adhesive tape, are used where necessary to prevent slippage of the bandage. With the points bent, they give greater security and smoothness.

The advantages of the method are:

1. The deadweight of the arm and shoulder on the injured side is supported and the hand is placed in such a position that there is a minimum of strain in any direction at the site of fracture.*

2. The bandage is light and porous rather than rigid. It causes no scalding pull on the skin beneath it. A slit may be made in the bandage over the dorsum of the hand for powdering.

3. The rest of the apparatus—the belt and crutch—does not prevent the patient from reclining comfortably.

4. Occasional inspection of the fracture site is easily accomplished.

5. The patient may move the retracted forearm enough to relieve muscular fatigue.

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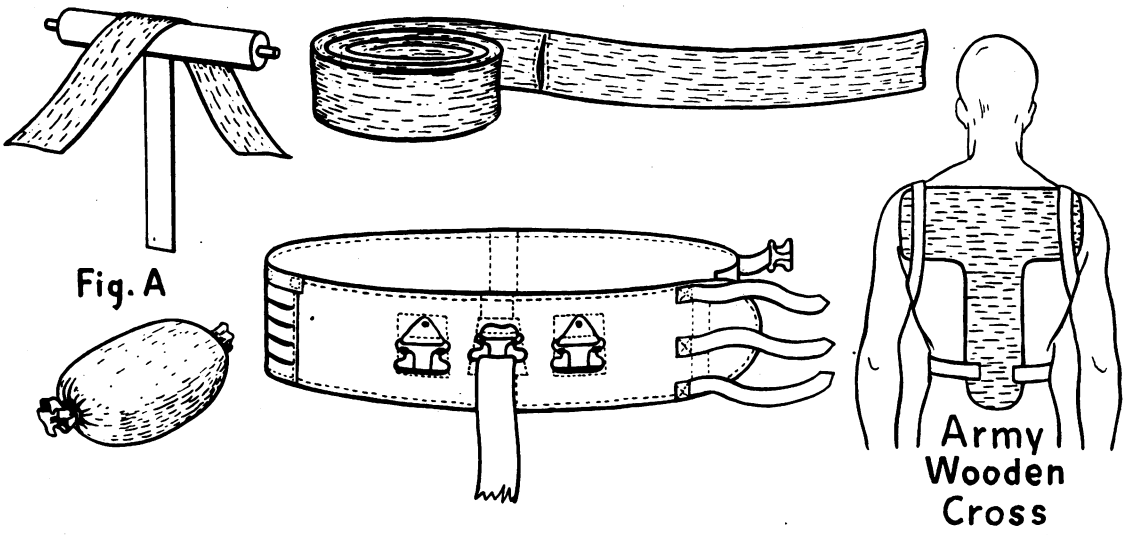
REFERENCE

Russ, R.: A retentive apparatus for fractures of the clavicle, J.A.M.A., 45:1086-1087, Oct. 7, 1905.

*This simple test is suggested to the reader: Assume that the right sternoclavicular joint is not a joint but a fracture. Press the finger tips of the left hand against the joint. Let the right shoulder sag. Then, with the shoulder still sagging, place the right hand over the left breast. Note the stress at the joint—stress which would be borne at the site of fracture if the clavicle were broken. Now move the right hand to a position on the right breast near the armpit with the palm toward the body and move the shoulder upward as it would be if there were support beneath it. Note the absence of stress at the "fracture" site.



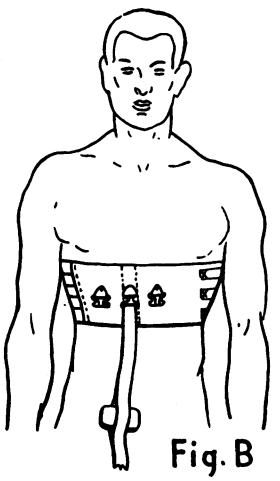


Fig. B

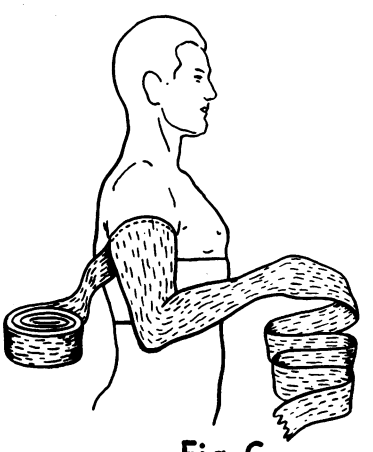


Fig. C

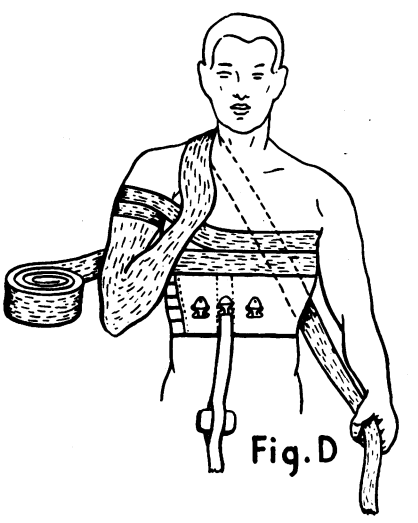


Fig. D

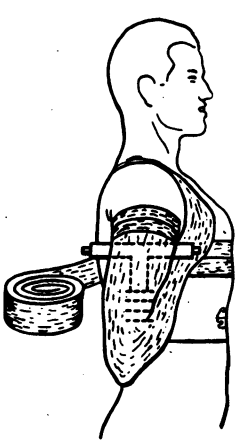


Fig. E

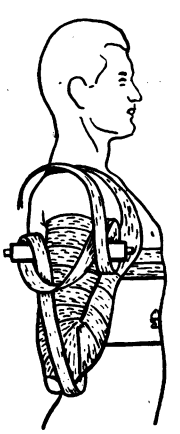


Fig. F

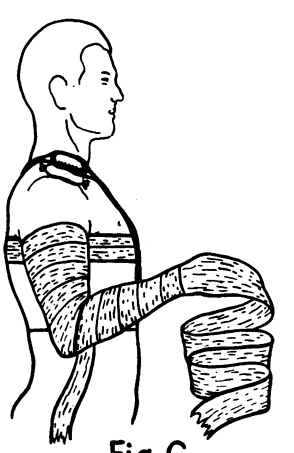


Fig. G